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GENDER INEQUALITY IN EMPLOYMENT IN MOZAMBIQUE

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Abstract
We investigate the gender employment gap in the expanding non-subsistence sector of the economy in Mozambique, a country still characterized by a large subsistence agricultural sector. We show evidence that the gender gap has widened over time and we identify two structural factors strongly associated with it. One factor is the still relatively lower level of female human capital, with less attained education, as well as literacy and Portuguese proficiency rates. The lower conditional employment probabilities of married women, as compared with men, is the other factor. These findings point at expanding women´s education and facilitating the access of married women to the emerging labour market as the most effective ways of achieving a more inclusive growth path that does not leave women behind.
JEL Classification: J16, J61, J71, O15, O55
Keywords: Gender, employment, education, Mozambique

1. INTRODUCTION

Labour markets in low-income countries are characterised by the major size of the agricultural sector, as well as by the larger proportion of the labour force working in small family businesses without remuneration (*e.g.* Rosenzweig, 1988). Under these conditions, the female labour force tends to be large, but a well-known hypothesis in development economics states that it may follow a U-shaped relationship with structural change (*e.g.* Goldin, 1995; Mammen and Paxson, 2000). This is based on empirical evidence and the predictions of basic labour supply models. According to these, economic development shrinks the subsistence sector and expands paid blue-collar jobs, especially in the manufacturing sector, that tend to exclude married women. This exclusion may be the result of prevailing social norms and women's preferences, but also of the high fixed costs for working out-of-home relative to the low pay received, in a context of high fertility rates. The improvement in the economic opportunities of men relative to (married) women brought about by economic development may then imply a drop in female labour force participation. This trend is reversed only in a later stage, when women outperform men in terms of education, when fertility rates drop, and when there is enough supply of white-collar jobs, those typically filled by women.

Gaddis and Klassen (2014) recently claimed that this hypothesis might well describe the path followed by developed economies in the past, but they found little empirical support for its relevance in current developing countries, especially regarding the declining portion of the U. According to these authors, historical contingent initial conditions

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would be more relevant to determine female labour force participation trends than secular development trends. In the sub-Saharan region, the ratio of female-to-male employment rates has been associated positively with democracy, gross domestic investment, primary education and urbanization, and negatively with real GDP per capita, foreign direct investment, sex population ratio and being a net oil-exporting country (Anyanwu and Augustine, 2013).

Mozambique is a low-income country in the sub-Saharan region. It has a predominantly male-dominated culture, with the north remaining "more 'traditional' than the southern and central parts of the country in terms of economic adaptation, sociocultural organization and gender characteristics, including limited economic participation, high levels of early marriage and low levels of literacy among women" (Tvedten, 2011:4). Traditional gender relations are the result of Bantu peoples' customs with the influence of Muslim settlers along the coast and long-lasting Portuguese colonization, more recently reshaped by post-independence war, FRELIMO's socialist policies and structural adjustment driven by IMF/World Bank (Tvedten, 2011). The country was characterized by high historical female labour participation rates (World Bank, 2012), but this occurred mostly in the subsistence agricultural sector. After the end of the long post-independence conflict in 1992, Mozambique engaged in a profound transformation of its resource-rich economy that increased the presence of men and women in a growing non-subsistence sector.

In this context, the aim of this paper is to analyse post-war trends in (non-subsistence) employment rates in Mozambique, and to assess how inclusive the current growth pattern is for women. Gender equality in employment is a key for the fulfilment of at least two important Sustainable Development Goals: achieving gender equality and empowerment of all women and girls (Goal 5), and promoting inclusive and sustainable economic growth, employment and decent work for all (Goal 8). We also aim at identifying the drivers of the gender employment gap. On the one hand, we analyse the role of distinct worker characteristics of men and women, such as human capital, location, ethnicity or migration. On the other hand, the role of distinct employment probabilities by sex conditional on those characteristics (*e.g.* employment rates being different for urban married men and women with high education). Combining both types of factors, we aim at explaining the gender gap in employment.

2. DATA AND MAIN VARIABLES

In our analysis, we combine information from available censuses and household budget surveys. We use the public use microdata samples of the 1997 and 2007 censuses conducted by *Instituto Nacional de Estatística*, harmonised by the Integrated Public Use Microdata Series (IPUMS-I, Minnesota Population Center, 2015).[1] The analysis will be complemented with labour information obtained from the two most recent household budget surveys, *Inquéritos aos Orçamentos Familiares* (IOF) 2008/2009 and 2014/2015. These surveys help to provide more up-to-date information, although more limited and with smaller samples than in censuses.

[1] The last 2017 census is not yet available, and Mozambique does not have a regular Labor Force Survey (only the *Inquérito Integrado à Força de Trabalho*, 2004/2005).

The samples consist of the population aged 15 and older residents in private households. This implies a total of 828,113 and 1,055,655 individual observations from the 1997 and 2007 censuses, respectively, and 27,123 and 31,291 in the two surveys. In the 2014/2015 survey, people may have been interviewed in different quarters, and thus the pool has 81,193 observations in total.[2]

Measuring employment in developing countries is challenging due to widespread informality, seasonality of most jobs or the fact that most work occurs within small family farm plots. Very often, the border between domestic chores and helping the family business is not very clear. In fact, the amount of employment will be different depending on the source used. We consider here two different definitions of employment: one more extensive, the other more restricted. In all cases, the employment status is determined during the reference week.[3] According to the first definition, *total employment*, the employed population generally consists of persons working for pay for an employer, self-employed persons, unpaid family workers engaged in the production of economic goods and persons who have a job but were temporarily absent for some reason. A second narrower measure of employment, that we call the *employment in the non-subsistence sector*, excludes those working in the primary sector and family workers. It is the latter definition of employment to which we will pay more attention, taking total employment as a reference, because it is in that sector where we will show that women are strongly underrepresented. Obviously, the other side of the coin is women's over-representation in the subsistence sector of the economy.

The determinants of employment considered in the analysis are grouped into the following categories. Available economic opportunities as well as possible differences in prevailing social norms are captured by the area (rural or urban) and province of residence. Human capital is considered using literacy (ability to read and write) and attained education: none, some primary, lower primary, upper primary, lower secondary, upper secondary, technical and higher education (at least some college or normal school). We also consider whether the adult is currently attending school. Among the demographic factors that may influence employment we include age (in brackets) and disability status. We also include marital status with an interaction with partner's employment, to take account of the fact that labour participation, especially for women, may be different for married adults, and influenced by spouse's employment.[4] We additionally include information regarding household size and composition (number of household members, number of children below 6 years old) to consider the traditional role of women as child care givers. Only in the case of the census data, we can include the ability to speak Portuguese in the set of variables measuring human capital, and consider other

[2] 30,105 individuals interviewed in the first quarter, 25,802 in the second, and 25,286 in the last one.

[3] The reference week was the last week of July 1997 or 2007 in the censuses, and the week before the interviews spread between September 2008 and August 2009 in IOF 2008/2009. In IOF 2014/15 people were interviewed between August 2014 and February 2015, and between May and August 2015. This means that IOF is less affected by seasonality in some jobs.

[4] Information is available when the partner is either the head or the head's spouse. Categories considered are: single, widowed, separated/divorced, married with working partner, married with non-working partner, and married with partner other than head or spouse.

demographic factors such as migration status five years ago (non-migrants, internal migrants, migrants from abroad), citizenship, foreign-born status, ethnicity (white, Indian, other) and religion (none, Muslim, Christian or other, only available in 2007).

3. METHODOLOGY

The analysis will rely on a regression-based decomposition technique, in line with the classical Blinder (1973)–Oaxaca (1973) approach, adapted to the analysis of differential in employment probabilities. We will first identify the determinants of employment, estimating the probability P_i^g of the ith working-aged person with gender g (m for men, f for women) to be employed conditional on individual and household characteristics, using a logit model:

$$P_i^g = F(X_i^g \beta^g) = \frac{\exp(X_i^g \beta^g)}{(1+\exp(X_i^g \beta^g)}, \tag{1}$$

where F represents the logistic probabilistic cumulative distribution, X_i^g is a vector of individual or household characteristics describing i's endowments and $\hat{\beta}^g$ is the corresponding vector of coefficients that capture the statistical association of each characteristic with employment probabilities, when the other characteristics are controlled for (conditional employment probabilities). These regressions will be run separately for men and women to allow for the determinants of employment to vary across those population groups. That is, we allow for the fact that having a higher education or increasing the number of children in the household might differently affect the employment probability of a man compared with a woman, for example.

The employment rate for people of each sex (E^g) is equal to their average predicted probability, where the working-age population of each sex is given by N^g:

$$E^g = \overline{P^g} = \overline{F\left(X_i^g \hat{\beta}^g\right)} = \frac{1}{N^g} \sum_{i=1}^{N^g} F\left(X_i^g \hat{\beta}^g\right). \tag{2}$$

The gender employment gap is then given by the difference in the average probabilities:

$$E^m - E^f = \overline{F\left(X_i^m \hat{\beta}^m\right)} - \overline{F\left(X_i^f \hat{\beta}^f\right)}, \tag{3}$$

Let us now consider the following counterfactual distribution: $\overline{F(X_i^m \hat{\beta}^f)}$. It estimates the employment rate of women when they have male average characteristics (X_i^m), while keeping their own conditional employment probabilities (determined by $\hat{\beta}^f$). Or, alternatively, it also estimates the employment rate of men if keeping their own characteristics, they had female conditional employment probabilities. By just adding and subtracting this counterfactual, we can decompose the gender gap in employment into two distinct terms:

$$E^m - E^f = \left[\overline{F\left(X_i^m \hat{\beta}^m\right)} - \overline{F\left(X_i^m \hat{\beta}^f\right)}\right] + \left[\overline{F\left(X_i^m \hat{\beta}^f\right)} - \overline{F\left(X_i^f \hat{\beta}^f\right)}\right]. \tag{4}$$

The explained or characteristics effect, second term in equation (4), provides a measure of the employment gap that can be attributed to gender differences in characteristics (*e.g.* lower women's education, lower proportion of female singles, etc.). These differences result from gender inequalities that appear before entering the labour market, although, especially in the case of education, might be the result of anticipated labour discriminatory practices too. The unexplained or coefficients effect, first term in equation (4), gives a measure of how important the gender difference in conditional probabilities of employment in explaining the gender gap in employment is, because it measures the difference in employment when both sexes have the same average characteristics (those of men). This component will tend to be larger if both sexes have different employment rates conditional on characteristics (*e.g.* different employment rates of married men and women with high education, with children, living in Maputo, etc.). This might reflect differences in participation decisions but also any sort of discrimination in the access to employment (*e.g.* if women are not hired for doing blue-collar jobs because based on gender stereotypes these are regarded as better fitted for men).

A second possible counterfactual is $F(X_i^f \hat{\beta}^m)$ shifting the roles of each gender by combining female characteristics with male conditional probabilities. This produces a different decomposition that has a slightly different interpretation:

$$E^m - E^f = \left[\overline{F\left(X_i^f \hat{\beta}^m\right)} - \overline{F\left(X_i^f \hat{\beta}^f\right)}\right] + \left[\overline{F\left(X_i^m \hat{\beta}^m\right)} - \overline{F\left(X_i^f \hat{\beta}^m\right)}\right]. \tag{5}$$

In equation (5), we first change the conditional probabilities of women, while they keep their own characteristics to produce the unexplained effect (first term) and then we also change female characteristics to produce the explained effect (second term, now evaluated with female coefficients). That is, the main difference between equations (4) and (5) is the coefficients and characteristics of which sex are used to evaluate the corresponding explained and unexplained effects.

The detailed decompositions serve to identify the individual contribution of each characteristic (whether through the explained or unexplained effects). These detailed decompositions will be obtained by a linearization of the cumulative distribution function around the mean value of characteristics, to overcome the fact that there is no unique way to determine the contribution of each characteristic due to the non-linearity of the logit function. Here, we followed the linear approximation proposed by Even and Macpherson (1990, 1993), extended by Yun (2004). Then, $W_k^{\Delta X} = \frac{\left(\bar{x}_k^m - \bar{x}_k^f\right)\hat{\beta}_k^f}{\left(\bar{X}^m - \bar{X}^f\right)\hat{\beta}^f}\left[\overline{F\left(X_i^m \hat{\beta}^f\right)} - \overline{F\left(X_i^f \hat{\beta}^f\right)}\right]$ is the individual contribution of characteristic k ($k = 1, \ldots, K$) to the characteristics effect in equation (4), while $W_k^{\Delta\beta} = \frac{\bar{x}_k^m\left(\hat{\beta}_k^m - \hat{\beta}_k^f\right)}{\bar{X}^m\left(\hat{\beta}^m - \hat{\beta}^f\right)}\left[\overline{F\left(X_i^m \hat{\beta}^m\right)} - \overline{F(X_i^m \hat{\beta}^f)}\right]$ is its contribution to the coefficients effect. A similar approach can be used for the detailed decomposition of equation (5).

Although we will analyse the decomposition of both effects, it is well established in the literature that the detailed decomposition of the coefficients effect is hard to identify because it changes with affine transformations of the continuous regressors and with the omitted category in the case of dummy variables (Oaxaca and Ransom, 1999). In

the case of dummies, the effect of the omitted variable is reflected in the intercept. Even if the literature offers some solutions for this problem (Gardeazabal and Ugidos, 2004; Yun, 2005a, 2005b), these are ad hoc and not generally accepted (Fortin, Lemieux, and Firpo, 2011). Our reported results will thus include no correction. The results thus have to be interpreted for the specification used in the regression following most common practices in the literature. Only strong effects are highlighted in the discussion of the results, and these tend to be robust to the omitted category. This identification problem, however, neither affects the detailed decomposition of the characteristics effect, nor the aggregate decomposition into characteristics and coefficients effects.

This approach is a case of the Recentred Influence Function (RIF) proposed by Firpo *et al.* (2007, 2009). This is because the RIF of the employment rate is just the employment indicator variable (1 if employed, 0 otherwise).[5] The common RIF approach would be estimated using the linear probability model (linear F) instead of the logit. This would also be the classical approach of Blinder (1973) and Oaxaca (1973), applied to the gender gap in mean employment rates. We use here the logit regression instead of OLS (linear probability model) because of the better properties of the former when the dependent variable is a dummy.

Furthermore, this approach has some advantages compared with other approaches used for dealing with the detailed decomposition of between-group differences in rates estimated using non-linear models like probit or logit.[6] First, the procedure is quite transparent and simple to compute, because it only requires estimates of the coefficients and sample means for the characteristics. Second, this procedure overrides the problem of path dependency that is common to all sequential approaches to nonlinear models, in which values of characteristics and/or coefficients of one group need to be switched with those of the other group. Third, unlike these sequential approaches, the detailed characteristics effect can be obtained without making any assumptions to match individuals of one group with the characteristics of another.

4. EMPLOYMENT AND GENDER IN MOZAMBIQUE: AN OVERVIEW

The total employment rates are lower for women than for men in the 1997 and 2007 censuses, and the gender gap increased by 1% point between these years (from 6.8% to 7.9% points in Table 1). The main reason among women for being out of employment in 2007 was housework (20.6% of the female working-age population, compared with 5.6% among men), with a lower proportion citing "being in school" as the main reason (8.5% of women, compared with 13.2% of men). Total employment rates are higher and more similar for men and women in the IOFs, with no gender gap in 2008/2009, and with a differential of about 3% points in 2014/2015. This discrepancy among data sources is due to the fact that the censuses report a lower proportion of the working-age population who did not work during the reference week but had a job, as well as of those working as family helpers or self-employed (Table 1). Despite the census and household

[5] See for example Essama-Nssah and Lambert (2012), where a rate is the FGT index when $\alpha = 0$.

[6] Among the alternatives, the most popular are those that sequentially give the characteristics of one group to individuals of the other group using repeated propensity score matching (such as Fairlie, 1999, 2005). See, for instance, a brief discussion of these approaches in Gradín (2009).

Table 1. Employment in Mozambique

	Census				IOF			
	1997		2007		2008/2009		2014/2015	
	Women	Men	Women	Men	Women	Men	Women	Men
Population aged 15 or older								
Employed	67.5	74.4	65.8	73.7	86.3	86.5	80.5	83.1
Worked	66.5	72.2	64.8	72.3	77.6	78.1	62.3	68.2
Did not worked, had a job	1.1	1.9	1.0	1.2	8.7	8.4	18.2	14.9
Employed in the non-subsistence sector[1]	5.2	21.6	8.4	26.2	9.4	23.1	12.6	29.0
Unemployed	0.2	1.4	0.3	1.3	4.6	3.7	2.6	2.4
Not in the labour force (total)	32.3	24.2	34.0	25.1	9.1	9.8	16.9	14.5
Not in the labour force (due to housework)	20.7	6.0	20.6	5.6	–	–	–	–
Not in the labour force (due to attending due to attending school) [1]	3.3	6.8	8.5	13.2	6.0	8.8	6.2	8.3
Employed population								
Self-employed (total)	67.7	65.1	79.3	69.2	43.7	62.4	61.5	62.6
Self-employed (with employees)	0.9	1.0	0.6	1.5	0.4	1.3	1.3	3.5
Self-employed (without employees)	29.6	27.5	43.0	37.5	43.3	61.1	60.2	59.1
Public sector	0.7	3.3	1.3	3.7	1.8	5.8	2.5	5.9
Family worker without pay	13.0	6.6	7.3	4.4	51.1	17.1	31.1	14.3
Permanent worker	–	–	–	–	88.8	86.3	86.9	83.9
Hours worked daily[1]	7.0	8.9	9.9	10.6	6.7	7.3	4.8	5.8
By occupation								
Managers	0.2	0.6	0.3	1.0	0.2	0.7	0.2	0.5
Professionals	0.2	0.8	0.4	1.0	0.4	0.9	1.2	2.8
Technicians	0.5	1.8	1.7	3.7	1.4	3.6	1.1	1.9
Clerks	0.6	1.6	0.4	0.8	0.4	0.7	0.5	1.0
Service and sales	1.8	3.9	7.6	12.1	6.6	8.4	9.3	11.9
Skilled agricultural, forestry and fishery	91.2	68.5	86.8	63.4	88.3	72.1	83.2	63.0
Crafts and related trades	0.8	10.0	0.7	11.4	0.8	7.2	1.0	9.7
Plant and machine operators and assemblers	0.2	2.4	0.2	2.7	0.1	1.8	0.6	4.8
Elementary occupations	3.7	9.4	1.8	3.7	1.9	4.2	2.9	4.3

Source: Own construction using 1997 and 2007 census (IPUMS-I) and IOF 2008/2009 and 2014/2015.

[1]In school = reason for not being in the labour force in the censuses; non-employed people attending school in IOF. Non-subsistence = Excluding family helpers and primary sector. Hours worked in IOF estimated from weekly hours worked (dividing by 7).

budget surveys capturing diverse levels of total employment, both show declining employment rates for both sexes over time, in a period of increasing schooling rates.

There is a large gender gap in terms of the quality and intensity of employment in Mozambique (Table 1). Women are less likely than men to work in the emerging non-subsistence sector, as well as in the public sector or as employers. Women are more likely to work as self-employed without employees or as unpaid family workers and, on average, work less hours than men. On the other side, women are also more likely to have a permanent job. Female-headed households are disproportionally concentrated in smaller plots and show lower productivity than male-headed households (Morgado and Salvucci, 2016). Furthermore, apart from their involvement in farm work, rural women in Mozambique still devote more time to household chores than in other countries (Arora, 2015).

Therefore, the gender gap in employment rates is much larger when it comes to employment in the non-subsistence sector. The magnitude of the gap depends on the source, almost 18% points in the last census, 16% points in the last IOF, but both sources point at an increase over time when compared with the previous one (1.5 and 2.5 additional percentage points respectively for 1997–2007 and 2008/2009–2014/2015). This indicates that despite their higher access to employment, women are lagging behind men in the development process of the Mozambican economy. This development is lowering total employment rates and expanding employment in the non-subsistence sector for both men and women, but the gender gap is in any case increasing. As Table 1 shows, there was a shift over time of employed workers from agricultural jobs to the non-farm sector, especially services and sales, plant operators, and craft and related trades, but this shift was much clearer among men than among women. Although these are jobs of heterogeneous quality, many will have very low productivity, so it is important to understand the gender gap in getting access to them.

This increasing gender gap in employment could be the result of gender differences in relevant characteristics, especially accumulated human capital, but also differences in location, migration, ethnicity, etc. Differences in human capital occur when women have less access to the relevant education due to prevailing social norms. Alternatively, the gap in employment could be the result of differences in conditional employment probabilities of men and women. That is, the propensity to be employed of, for example, a highly educated married adult with children living in Maputo, may be different for men and women. This difference in conditional employment probabilities may also be the result of prevailing social norms, that confine women, especially if married, to home work or the subsistence sector, or of direct discrimination in employment, especially to certain jobs typically regarded as more appropriate for men.

Working-age women and men do indeed differ in their distributions of relevant characteristics (Table 2). Most outstanding is the high and persistent gap in human capital by sex. Literacy rates are nearly 30% points lower for women, with also a much lower proportion of women with some education or speaking Portuguese. The proportion of female adults attending school is also lower compared with men, indicating that the educational gap persists in younger cohorts too. For example, 41% and 27%, respectively, of men and women between 15 and 24 years old were attending school according to IOF 2014/2015 (the bulk of them in the lower secondary level: 17% of men and 12% of women). Women are also less likely than men to be single, and more likely to be divorced or a widower. Women are also underrepresented among immigrants and those reporting no religion.

Women and men also diverge in their conditional employment probabilities (Table 3). The gender gap in employment is larger in urban areas, among the 25–34-year-old population, married, with children, with primary or secondary education completed, or among those speaking Portuguese, in ethnic minorities (white, Indian, Muslim), and among foreign-born and migrants. The logit regressions for the employment probability (Table 4) allow us to identify in a reduced form the extent to which characteristics are associated with higher/lower employment rates for each gender after controlling for the rest of the characteristics, and how they diverge between total employment and employment in the non-subsistence sector. For example, they show that employment in the non-subsistence sector tend to increase for both male and female in southern provinces, urban

Table 2. Education and marital status by gender, working-age population

	Census				IOF			
	1997		2007		2008/2009		2014/2015	
	Women	Men	Women	Men	Women	Men	Women	Men
Education								
None	70.2	43.0	54.1	27.8	38.6	16.3	41.7	19.2
Some primary	16.1	27.0	21.7	28.3	33.0	32.0	23.3	23.5
Lower primary	8.8	17.5	11.8	20.3	13.4	22.2	12.1	18.8
Upper primary	3.5	8.1	8.1	14.4	10.4	19.7	13.5	21.7
Lower secondary	0.7	2.2	2.0	4.3	2.5	4.7	4.6	7.4
Upper Secondary	0.3	0.8	0.6	1.5	0.8	2.1	2.6	4.4
Some university/normal school	0.1	0.6	0.5	1.3	0.4	1.1	0.5	1.3
Unknown	0.1	0.4	0.8	1.6	0.7	1.5	1.6	3.0
Literacy	23.8	52.9	35.0	64.9	36.1	66.8	40.7	68.6
Speaks Portuguese	28.3	56.7	39.9	67.4	–	–	–	–
Attending school (total)	4.3	9.1	12.8	19.3	13.7	19.3	10.1	15.6
Attending school (15-24 years old)	10.4	22.8	27.9	45.9	31.7	50.6	26.5	41.0
Marital status/spouse' employment								
Single	18.4	29.8	17.9	30.0	16.2	28.7	18.4	30.9
Separated/divorced/spouse absent	6.3	2.2	7.4	2.5	9.9	3.0	8.3	2.2
Widowed	8.8	1.5	9.5	1.5	10.9	1.6	11.2	1.4
Married/in union (total)	66.5	66.5	65.3	66.0	63.1	66.7	62.2	65.5
Married/in union (With non-working partner (head/spouse))	16.7	20.8	13.1	20.5	3.8	4.7	5.7	8.4
Married/in union (With working partner (head/spouse))	42.9	40.6	45.6	40.7	54.2	58.1	51.1	52.6
Married/in union (With partner other than head/spouse)	6.9	5.1	6.6	4.8	5.1	3.9	5.5	4.6

Note: Population aged 15 or older.

Source: Own construction using IPUMS-International and IOF.

areas, with higher attained education, at younger age or in smaller households. Among the main differences by sex, it stands out that the increase in the likelihood of married people working in the non-subsistence sector, compared with singles, is remarkably higher for men than for women. Not surprisingly, the results for urban areas, education, or age, are the opposite when it comes to explaining the probability of working in any sector. In low-income countries, in the absence of social benefits, only relatively more affluent and educated people in urban areas can afford not to work. If people do not find a paid job, they engage in any kind of activity to survive, mostly in the subsistence economy (see, for example, a more elaborate argumentation of this in Fields, 2012). However, the gender differential in conditional employment probabilities by marital status can be found in total employment as well as in the non-subsistence sector.

5. DECOMPOSING THE GENDER GAP IN EMPLOYMENT

The results using the main counterfactual in which women are given male average characteristics or, equivalently, men are given female conditional employment probabilities are reported in Tables 5–7.

The gender gap in total employment that is explained by worker characteristics is negative and increasing over time, regardless of the source used to measure it (respectively,

Table 3. Employment rates by gender and characteristics

	Employment								Non-subsistence employment							
	Census		IOF						Census		IOF					
	1997		2007		2008/2009		2014/2015		1997		2007		2008/2009		2014/2015	
	W	M	W	M	W	M	W	M	W	M	W	M	W	M	W	M
All	67.5	74.4	65.8	73.7	86.3	86.5	80.5	83.1	5.2	21.6	8.4	26.2	9.4	23.1	12.6	29.0
Rural	76.5	78.9	75.6	78.5	95.2	92.4	91.5	89.8	1.4	9.8	2.9	14.2	1.8	10.1	3.5	15.3
Urban	44.5	64.6	44.1	64.5	67.4	75.0	59.2	70.9	15.1	47.1	20.4	49.3	25.4	48.6	30.4	53.5
Niassa	60.9	72.7	66.1	76.9	90.8	92.9	77.9	84.1	2.0	13.0	4.8	18.3	5.8	17.0	5.0	17.9
Cabo Delgado	78.5	83.4	73.0	79.0	91.4	93.5	81.6	85.6	1.5	11.2	3.8	15.0	3.7	12.0	5.8	16.7
Nampula	72.8	81.4	66.2	77.8	88.2	89.6	78.7	83.8	1.7	16.7	4.0	20.2	4.4	16.8	9.4	24.2
Zambézia	72.8	76.2	71.7	74.8	93.6	90.5	88.7	86.1	1.4	13.3	2.6	15.8	1.5	13.8	4.4	19.9
Tete	66.8	73.0	68.6	77.5	91.3	89.3	88.9	89.9	2.1	11.2	4.7	16.4	2.7	10.1	5.5	14.3
Manica	53.6	64.7	65.1	72.2	92.2	88.7	85.7	86.4	3.8	22.0	9.9	29.9	6.9	22.0	10.1	30.1
Sofala	58.5	67.5	67.2	72.6	84.6	84.3	79.0	79.7	4.9	31.1	8.7	34.7	9.3	32.2	10.0	30.1
Inhambane	76.7	76.3	72.0	68.1	86.9	81.0	85.5	79.6	5.5	20.4	8.4	26.2	6.7	22.5	12.9	32.7
Gaza	76.0	65.6	70.6	66.0	87.7	79.7	85.7	78.6	3.8	18.1	6.9	33.3	5.3	24.7	13.2	42.2
Maputo province	54.7	68.0	47.0	67.4	70.1	73.9	66.6	79.5	14.4	43.2	22.0	51.5	33.2	54.9	36.5	62.2
Maputo city	40.7	67.0	40.6	63.7	55.8	69.4	53.1	67.9	32.7	62.8	36.4	60.9	47.2	64.0	47.1	64.4
No schooling	73.0	79.5	75.1	83.5	93.4	93.9	89.2	89.2	2.1	9.4	3.5	11.7	3.0	7.8	4.7	12.2
Some primary	61.9	72.2	66.4	77.2	93.2	93.0	89.3	89.7	7.2	19.4	8.0	20.6	5.9	13.0	8.0	17.4
Lower primary	48.8	69.2	49.9	68.8	79.3	86.2	78.5	85.3	13.9	33.0	14.1	31.1	16.0	22.5	17.3	25.7
Upper primary	38.7	66.5	34.3	59.0	58.5	75.3	59.1	75.3	21.7	46.3	18.2	38.8	20.6	34.7	21.8	36.0
Lower secondary	45.6	71.0	37.2	62.9	52.3	72.9	48.9	68.2	37.6	58.9	30.4	52.2	35.4	52.9	29.5	47.0
Upper Secondary	55.3	76.0	59.4	80.5	65.0	82.2	53.8	79.7	51.0	68.4	55.4	74.0	52.6	71.1	45.9	69.0
Technical	63.8	81.0	41.1	60.0	49.7	67.9	45.2	62.2	57.0	71.8	37.8	54.7	38.4	61.5	41.6	52.7
University	74.3	90.5	60.0	71.3	75.9	77.4	64.8	82.0	71.5	85.3	58.2	68.7	73.9	75.0	62.4	79.2
Literate	50.9	70.2	49.4	68.9	72.5	82.7	67.5	80.4	15.1	32.8	17.3	34.2	20.5	30.6	24.2	36.6
Student	19.0	25.1	26.4	30.5	56.3	54.6	39.0	46.9	4.7	7.7	7.6	12.0	9.0	12.7	12.8	17.0
Speaks Portuguese	51.0	70.6	50.6	69.5					14.1	32.5	16.8	34.2				
15–24 years	59.7	59.7	51.5	50.3	74.8	67.8	64.0	62.6	3.9	14.7	5.4	16.8	6.0	14.7	7.8	19.2
25–34 years	70.2	81.7	70.6	84.9	90.3	94.8	85.9	93.0	7.4	28.3	11.3	36.3	13.0	32.6	18.0	41.8
35–44 years	74.6	84.9	77.2	89.0	94.9	98.1	92.0	96.2	7.6	31.1	12.3	34.0	13.2	30.7	17.4	35.0
45–54 years	76.2	85.4	79.0	88.5	96.8	97.1	93.2	96.7	4.5	24.5	9.6	31.1	10.7	26.9	14.0	35.1
55+ years	68.5	78.1	68.2	79.2	86.2	91.3	82.1	88.5	2.2	13.7	3.9	15.9	3.7	12.5	6.9	19.7
With Disability	62.0	68.6	58.8	66.8	64.0	69.7	53.9	56.9	2.8	13.6	4.1	16.1	4.1	17.2	7.7	16.5
White	51.4	84.9	60.3	84.4					44.3	76.4	48.4	70.4				
Indian	25.3	77.9	36.4	80.9					19.8	71.5	23.6	70.6				
1 household member	76.5	79.5	74.8	81.3	94.4	89.9	88.2	89.6	4.0	25.7	7.5	31.8	10.0	36.5	10.6	39.5
2 household members	74.6	80.4	72.7	80.7	92.2	91.4	87.6	88.5	3.2	17.5	6.9	23.9	7.9	20.6	10.1	28.7
3+ household members	66.0	73.3	64.4	72.5	85.3	85.9	79.6	82.5	5.6	22.0	8.6	26.3	9.5	23.0	12.9	28.7

	Employment								Non-subsistence employment							
	Census		IOF						Census		IOF					
	1997		2007		2008/2009		2014/2015		1997		2007		2008/2009		2014/2015	
	W	M	W	M	W	M	W	M	W	M	W	M	W	M	W	M
No children (<6)	69.4	73.9	66.0	71.0	85.8	84.1	78.4	78.1	5.2	20.7	9.3	25.8	10.9	23.1	13.9	29.3
1 child (<6)	66.9	74.4	63.4	73.1	84.7	86.3	78.4	82.4	5.7	22.0	9.6	28.7	10.9	25.1	15.2	32.4
2+ children (<6)	66.2	74.9	67.2	76.6	87.7	88.6	83.6	87.7	4.9	22.3	6.7	25.0	7.2	21.8	10.0	26.4
Single	52.2	53.4	38.8	43.6	59.3	61.8	52.3	57.0	8.3	16.4	10.3	17.5	9.7	15.9	13.6	20.6
Divorced	72.9	77.1	74.9	80.1	91.6	88.6	86.0	84.4	8.2	21.9	13.9	27.7	19.5	30.4	23.0	44.6
Widowed	68.3	69.3	70.6	72.6	86.3	86.6	83.7	78.5	3.8	12.0	8.3	18.9	9.2	19.4	12.7	30.4
Married with Non-working partner (head/spouse)	60.7	72.2	62.5	78.6	87.8	93.2	81.0	89.6	4.2	36.3	7.1	43.7	18.2	81.8	17.1	62.9
Married with Working partner (head/spouse)	76.5	91.0	75.4	92.7	93.5	98.0	89.9	97.1	4.2	17.1	7.1	22.3	7.1	20.7	10.2	26.3
Other married	63.5	74.1	61.6	76.6	83.5	86.4	72.4	87.0	5.2	30.8	7.9	41.8	7.0	38.7	12.1	46.0
Non-migrant	67.8	74.7	67.0	73.9					5.4	21.3	7.8	24.5				
National migrant	62.8	71.8	49.1	69.9					6.1	29.0	14.8	42.9				
International migrant	72.0	75.4	62.7	79.9					2.1	11.9	16.3	43.4				
Non-citizen	58.9	79.9	67.6	83.3					11.1	39.8	9.5	32.6				
Foreign-born	65.5	77.8	68.6	79.7					5.6	18.8	6.8	23.2				
No religion			68.4	75.1							5.5	24.0				
Muslim			66.1	77.0							5.5	24.0				
Christian			65.1	72.2							9.8	27.7				
Other religion			64.4	71.9							10.3	28.4				

Note: Population aged 15 or older.

Source: Own construction using IPUMS-International and IOF.

Table 4. Employment regressions by gender

	Total								Non-subsistence							
	1997		2007		2008/2009		2014/2015		1997		2007		2008/2009		2014/2015	
	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men
Urban	−1.236***	−0.456***	−1.111***	−0.323***	−1.781***	−1.110***	−1.695***	−1.084***	1.446***	1.590***	1.413***	1.500***	2.000***	1.680***	1.790***	1.529***
Niassa	−0.455***	−0.252***	0.079***	0.186***	0.624***	1.123***	−0.518***	−0.642***	−1.226***	−1.200***	−0.741***	−0.960***	−0.994***	−1.280***	−1.580***	−1.716***
Cabo Delgado	0.348***	0.312***	0.445***	0.280***	0.527**	1.171***	−0.285***	−0.411***	−1.353***	−1.095***	−0.895***	−1.087***	−1.493***	−1.599***	−1.208***	−1.616***
Nampula	0.084***	0.201***	0.127***	0.156***	0.260*	0.689***	−0.452***	−0.651***	−1.427***	−0.813***	−1.061***	−0.934***	−1.601***	−1.356***	−0.858***	−1.398***
Zambézia	0.024	−0.138***	0.349***	−0.145***	1.019***	0.679***	0.417***	−0.368***	−1.313***	−0.836***	−1.276***	−1.034***	−2.278***	−1.281***	−1.646***	−1.366***
Tete	−0.215***	−0.199***	0.160***	0.246***	0.539***	0.398*	0.269***	0.002	−1.057***	−1.127***	−0.575***	−0.920***	−1.662***	−1.921***	−1.258***	−1.825***
Manica	−0.599***	−0.378***	0.226***	0.255***	0.967***	0.735***	0.427***	0.099	−0.692***	−0.639***	0.000	−0.283***	−1.133***	−1.003***	−0.784***	−0.875***
Sofala	−0.247***	−0.205***	0.511***	0.246***	0.602***	0.593***	0.100	−0.401***	−0.709***	−0.311***	−0.498***	−0.311***	−0.971***	−0.561***	−1.073***	−1.038***
Inhambane	0.495***	0.135***	0.648***	−0.175***	0.527***	0.074	0.565***	−0.388***	−0.249***	−0.387***	−0.312***	−0.316***	−0.977***	−0.572***	−0.599***	−0.533***
Gaza	0.643***	−0.340***	0.654***	−0.271***	0.640***	0.015	0.528***	−0.447***	−0.767***	−0.608***	−0.665***	0.001	−1.393***	−0.467**	−0.603***	−0.109
Maputo city	−0.066***	0.265***	0.173***	0.135***	−0.219*	0.171	−0.131*	−0.378***	0.526***	0.302***	0.263***	0.008	0.031	−0.179	−0.031	−0.441***
Some primary	0.012	0.109***	−0.039***	0.080***	0.228*	0.197	0.143*	0.284**	0.363***	0.284***	0.267***	0.233***	0.245*	0.121	0.143*	0.219**
Lower primary	−0.143***	0.079***	−0.265***	0.004	−0.046	0.005	−0.112	0.269**	0.577***	0.578***	0.400***	0.519***	0.441**	0.293	0.391***	0.434***
Upper primary	−0.189***	0.185***	−0.441***	−0.036	−0.396*	−0.157	−0.403***	0.173	1.017***	0.980***	0.679***	0.858***	0.776***	1.055***	0.728***	0.872***
Lower secondary	0.275***	0.396***	−0.179***	0.082***	−0.574**	−0.264	−0.444***	0.026	1.742***	1.346***	1.283***	1.266***	1.553***	1.778***	1.058***	1.284***
Upper Secondary	0.661***	0.629***	0.315***	0.326***	−0.258	−0.577	−0.683***	−0.109	1.990***	1.574***	1.784***	1.618***	1.629***	1.719***	1.221***	1.668***
Technical	0.834***	0.751***	0.117**	0.067*	−0.444	−0.546	−0.455**	−0.112	2.224***	1.587***	1.519***	1.212***	1.365***	1.470***	1.564***	1.251***
University	1.099***	1.221***	1.073***	0.664***	0.984***	0.137	0.335**	0.627***	2.831***	2.632***	2.436***	1.966***	3.056***	2.340***	2.359***	2.680***
Unknown education	0.210*	0.018	0.183***	0.322***	0.674	−0.269	0.107	0.345	1.647***	1.084***	0.630***	0.949***	0.376	0.568	0.699**	0.951***
Literate	−0.097***	0.009	−0.053***	0.046**	−0.400**	0.011	−0.114	0.002	0.537***	0.535***	0.634***	0.556***	0.904***	0.729***	0.614***	0.320***
Unknown literacy	0.595***	0.562***	0.034	−0.136	−0.119	0.955	−0.337*	−0.499*	0.397***	0.085	0.315***	0.309***	0.247	−0.763	−0.331	−0.025
Student	−1.625***	−1.817***	−1.211***	−1.781***	−1.041***	−1.595***	−1.039***	−1.159***	−1.772***	−2.055***	−1.204***	−1.722***	−1.008***	−1.585***	−0.896***	−1.281***
15–24 years	0.291***	0.223***	0.454***	0.436***	0.535***	0.521***	0.769***	0.718***	0.884***	0.354***	0.884***	0.481***	0.939***	0.708***	1.243***	0.584***
35–44 years	0.496***	0.352***	0.755***	0.459***	1.121***	0.611*	1.314***	0.652***	1.112***	0.478***	1.071***	0.333***	1.053***	0.679***	1.398***	0.433***
45–54 years	0.501***	0.315***	0.789***	0.304***	1.528***	−0.073	1.453***	0.620***	0.745***	0.400***	0.842***	0.131***	0.900***	0.422**	1.045***	0.349***
55+ years	0.080***	−0.226***	0.129***	−0.499***	−0.187	−1.420***	0.244***	−0.788***	−0.066	−0.179***	−0.073*	−0.592***	−0.459*	−0.402*	0.227*	−0.497***
With Disability	−0.564***	−0.602***	−0.730***	−0.873***	−2.298***	−1.860***	−1.866***	−1.985***	−0.245***	−0.325***	−0.395***	−0.423***	−0.194	−0.094	−0.347	−0.607***
1 household member	0.266***	0.630***	0.151***	0.798***	0.786**	0.836*	0.143	0.820***	0.062	0.484***	0.080*	0.508***	0.402	0.720**	0.221	0.388***
3+ household members	−0.243***	0.014	−0.232***	−0.115***	−0.350*	0.025	−0.350***	−0.410***	−0.02	0.065***	−0.117***	−0.023	−0.053	−0.048	−0.052	−0.217**
1 child (<6 years)	0.047***	−0.049***	0.050***	−0.007	0.099	−0.079	0.136**	0.125**	−0.080***	−0.062***	−0.058***	−0.021	−0.159	0.021	0.115**	0.113*
2+ children (<6 years)	−0.003	−0.021	0.027**	−0.020*	0.043	−0.181	0.242***	0.236***	−0.243***	−0.092***	−0.194***	−0.128***	−0.221*	−0.003	−0.02	−0.009
Divorced	0.296***	0.340***	0.736***	0.652***	0.999***	0.984***	0.922***	0.828***	0.236***	0.170***	0.610***	0.433***	1.356***	0.459*	0.864***	0.838***
Widowed	−0.086***	0.168***	0.326***	0.516***	0.109	1.382***	0.389***	0.904***	−0.188***	−0.081	0.248***	0.286***	1.009***	0.305	0.519***	0.758***
Married (Non-working partner)	−0.323***	0.302***	−0.030*	0.781***	0.569**	2.110***	0.192*	1.584***	−0.501***	0.885***	−0.102***	1.253***	1.020***	2.430***	0.323***	1.761***
Married (Working partner)	0.539***	1.607***	0.755***	2.061***	0.917***	2.655***	0.882***	2.596***	−0.601***	0.530***	−0.213***	0.789***	0.308*	0.752***	0.017	0.927***
Other married	0.056***	0.460***	0.385***	0.802***	0.583***	0.842***	0.303***	1.063***	−0.537***	0.669***	−0.274***	0.923***	−0.202	0.948***	−0.126	0.924***
Intercept	1.014***	0.679***	0.435***	0.602***	2.240***	1.597***	1.705***	1.761***	−3.616***	−2.671***	−3.476***	−2.447***	−4.178***	−2.829***	−3.788***	−1.999***
N	379,240	448,873	491,423	564,232	12,382	14,736	37,489	43,704	379,240	448,873	491,423	564,232	12,382	14,736	37,489	43,704
Pesudo-R^2	18.2	13.7	28.2	17.0	39.0	35.0	34.3	30.1	28.7	30.2	27.9	26.5	35.6	40.4	29.9	32.6

Notes: Population aged 15 or older; p-values: *<0.05; **<0.01; ***<0.001.

Source: Own construction using IPUMS-International and IOF.

Table 5. Decomposition of the gender gap in total employment rates (Explained and Unexplained terms)

Differential	Census				IOF			
	1997		2007		2008/2009		2014/2015	
	6.83* (0.10)**		**7.90*** (0.09)**		**0.21 (0.21)**		**2.56*** (0.28)**	
	Expl.	**Unexpl.**	**Expl.**	**Unexpl.**	**Expl.**	**Unexpl.**	**Expl.**	**Unexpl.**
All	−4.66***	11.49***	−6.25***	14.15***	−3.51***	3.72***	−5.05***	7.61***
	(0.08)	(0.11)	(0.07)	(0.09)	(0.35)	(0.53)	(0.22)	(0.32)
Geographic	−1.45***	3.45***	−1.00***	1.02***	−0.39*	1.45	−0.92***	−1.56*
	(0.03)	(0.38)	(0.02)	(0.28)	(0.17)	(0.79)	(0.11)	(0.64)
Education	−0.71***	2.53***	−1.26***	3.18***	−1.84***	1.66*	−1.42***	3.33***
	(0.06)	(0.14)	(0.05)	(0.15)	(0.24)	(0.84)	(0.16)	(0.57)
Student	−1.64***	−0.29***	−1.65***	−1.63***	−0.61***	−0.55***	−0.87***	−0.16
	(0.03)	(0.04)	(0.02)	(0.04)	(0.09)	(0.13)	(0.06)	(0.09)
Age	0.06***	−1.66***	0.10***	−2.76***	0.11	−2.37***	−0.32***	−3.30***
	(0.01)	(0.16)	(0.01)	(0.13)	(0.11)	(0.66)	(0.07)	(0.47)
Disability	−0.09***	−0.02	−0.11***	−0.08***	−0.16	0.07	−0.17***	−0.02
	(0.01)	(0.02)	(0.01)	(0.01)	(0.09)	(0.05)	(0.03)	(0.03)
Household composition	−0.14***	3.29***	−0.10***	1.39***	−0.16**	1.03	−0.17***	−0.38
	(0.01)	(0.27)	(0.01)	(0.24)	(0.06)	(1.03)	(0.03)	(0.89)
Marital status+	−0.68***	9.71***	−2.24***	10.58***	−0.47*	5.76***	−1.18***	9.22***
	(0.04)	(0.18)	(0.04)	(0.15)	(0.21)	(0.69)	(0.13)	(0.44)
Intercept		−5.51***		2.46***		−3.33		0.49
		(0.51)		(0.43)		(1.72)		(1.34)

Notes: Population aged 15 or older. Standard errors (Delta method) in parentheses below. +Marital status includes interaction with partner's employment. p-values: *<0.05; **<0.01; ***<0.001.

Counterfactual: Women's coefficients; men's characteristics. Expl. = explained or characteristics effect $\left[\overline{F\left(X_i^m\hat{\beta}^f\right)}-\overline{F(X_i^f\hat{\beta}^f)}\right]$; Unexpl. = Unexplained or Coefficients effect, $\left[\overline{F\left(X_i^m\hat{\beta}^m\right)}-\overline{F\left(X_i^m\hat{\beta}^f\right)}\right]$

Source: Own construction using IPUMS-International and IOF.

from 4.7% to 6.2% points in the census, from 3.5 to 5.1 in the IOFs, Table 5). That is, the distinctive characteristics of women do not explain their lower total employment compared with men. If women had the same characteristics as men but kept their own conditional employment probabilities, the gender gap would be larger than observed: 11.5% and 14.2% points respectively in 1997 and 2007, instead of observed 6.8 and 7.9; 3.7 and 7.6 in 2008/2009 and 2014/2015, instead of the observed 0.2 and 2.6. Most characteristics have a negative small contribution indicating higher gap if they are equalized for men and women. The largest negative contributions are those associated with the lower attained education and literacy of women, their lower schooling rates, or the different distribution of marital status and location by sex. That is, if we increase the level of human capital of women or the proportion of singles to equalise the shares with men, while keeping conditional employment rates constant, female total employment rates would be reduced because more educated and single women are less likely to be at work. This implies that other thing kept constant, the expected improvement in women's education, their migration to urban areas, or deter or delay marriage, women's employment is expected to decline over time, pointing at Mozambique being in the downward

segment of the hypothetical inverted U mentioned in the literature. Therefore, we must look at the unexplained effects (distinct conditional employment probabilities) to find out that the lower employment rates of married and educated women, other things equal, are what explain any existing gender gap in total employment.

Employment is quite heterogenous in Mozambique as already discussed, with men and women working in different segments of jobs. Therefore, the need to analyse more specific types of employment. It is of special interest to understand the gap in the type of employment that is, and will continue to be, created during the economic development of the country. The largest and most relevant gender gap occurs, indeed, in the access to the emerging non-subsistence sector of the economy. In this case, distinctive characteristics by gender do play a more significant role (Table 6). Overall, they explain around 2% points (*i.e.* about 12%–14% of the gender gap): 2.2 and 2.5 in the censuses, 1.9 and 2.0 in the IOFs. The relatively lower human capital of women alone explains 3.2% points in the 2007 census, a higher level of 3.8% points in the last IOF (respectively, 18% and 23% of the gap). In both cases, the contribution has increased over time. The characteristic effect of education is the opposite when it comes to explaining employment in the

Table 6. Decomposition of the gender gap in non-subsistence employment rates (Explained and Unexplained terms)

Differential	Census				IOF			
	1997		2007		2008/2009		2014/2015	
	16.37* (0.07)**		**17.88*** (0.07)**		**13.78*** (0.50)**		**16.34*** (0.28)**	
	Expl.	**Unexpl.**	**Expl.**	**Unexpl.**	**Expl.**	**Unexpl.**	**Expl.**	**Unexpl.**
All	2.19***	14.18***	2.49***	15.39***	1.95***	11.83***	1.96***	14.37***
	(0.04)	(0.08)	(0.04)	(0.08)	(0.29)	(0.52)	(0.17)	(0.30)
Geographic	0.19***	2.35***	0.29***	0.60*	0.06	1.26	0.10	−2.58***
	(0.02)	(0.24)	(0.02)	(0.24)	(0.17)	(1.11)	(0.09)	(0.67)
Education	2.53***	−0.35***	3.25***	−0.24	3.63***	−1.04	3.73***	−1.01
	(0.04)	(0.10)	(0.04)	(0.14)	(0.29)	(1.04)	(0.15)	(0.60)
Student	−0.61***	−0.20***	−0.71***	−1.06***	−0.43***	−0.84***	−0.51***	−0.63***
	(0.02)	(0.04)	(0.02)	(0.06)	(0.08)	(0.26)	(0.06)	(0.15)
Age	−0.01	−2.19***	0.03***	−3.94***	−0.06	−1.33	−0.35***	−5.25***
	(0.01)	(0.13)	(0.01)	(0.15)	(0.08)	(0.80)	(0.06)	(0.57)
Disability	−0.01***	−0.02	−0.02***	−0.01	−0.01	0.02	−0.02	−0.06
	(0.00)	(0.02)	(0.00)	(0.02)	(0.02)	(0.13)	(0.01)	(0.05)
Household composition	0.04***	1.11***	0.03***	1.40***	0.00	1.10	−0.03	−1.48
	(0.01)	(0.22)	(0.01)	(0.23)	(0.03)	(1.24)	(0.02)	(0.95)
Marital status[+]	0.05*	6.22***	−0.37***	7.79***	−1.23***	2.49*	−0.96***	6.76***
	(0.03)	(0.15)	(0.03)	(0.17)	(0.21)	(0.98)	(0.12)	(0.66)
Intercept		7.26***		10.85***		10.16***		18.61***
		(0.39)		(0.42)		(2.29)		(1.48)

Notes: Population aged 15 or older. Standard errors (Delta method) in parentheses below. [+]Marital status includes interaction with partner's employment. p-values: *<0.05; **<0.01; ***<0.001.

Counterfactual: Women's coefficients; men's characteristics. Expl. = explained or characteristics effect $\left[\overline{F\left(X_i^m\hat{\beta}^f\right)}-\overline{F(X_i^f\hat{\beta}^f)}\right]$; Unexpl. = Unexplained or Coefficients effect, $\left[\overline{F\left(X_i^m\hat{\beta}^m\right)}-\overline{F\left(X_i^m\hat{\beta}^f\right)}\right]$

Source: Own construction using IPUMS-International and IOF.

Table 7. Decomposition of the gender gap in employment rates, 2007 (Explained and Unexplained terms)

	Total		**Non-subsistence**	
Differential	**7.90*** (0.09)**		**17.88*** (0.07)**	
	Expl.	**Unexpl.**	**Expl.**	**Unexpl.**
All	−6.80***	14.70***	2.71***	15.17***
	(0.07)	(0.10)	(0.05)	(0.08)
Geographic	−0.95***	0.70*	0.22***	0.14
	(0.02)	(0.29)	(0.01)	(0.24)
Education	−0.43***	1.86***	1.60***	0.54**
	(0.07)	(0.20)	(0.05)	(0.19)
Student	−1.63***	−1.61***	−0.63***	−1.02***
	(0.02)	(0.04)	(0.02)	(0.06)
Language	−1.11***	1.84***	1.84***	−1.57***
	(0.06)	(0.19)	(0.04)	(0.19)
Age	0.10***	−2.62***	0.03***	−4.21***
	(0.01)	(0.14)	(0.01)	(0.15)
Disability	−0.10***	−0.08***	−0.02***	−0.01
	(0.01)	(0.01)	(0.00)	(0.02)
Race	−0.01***	0.03***	0.00***	0.02***
	(0.00)	(0.00)	(0.00)	(0.00)
Religion	−0.23***	0.69***	−0.03***	0.56***
	(0.01)	(0.07)	(0.01)	(0.08)
Household composition	−0.10***	1.56***	0.02***	1.62***
	(0.01)	(0.24)	(0.01)	(0.23)
Marital status[+]	−2.20***	10.67***	−0.33***	8.09***
	(0.04)	(0.15)	(0.02)	(0.18)
Immigration	−0.12***	0.62***	0.03***	0.22***
	(0.01)	(0.03)	(0.00)	(0.02)
Intercept		1.04*		10.80***
		(0.44)		(0.44)

Notes: Population aged 15 or older. Standard errors (Delta method) in parentheses below. [+]Marital status includes interaction with partner's employment. p-values: *<0.05; **<0.01; ***<0.001.

Counterfactual: Women's coefficients; men's characteristics. Expl. = explained or characteristics effect $\left[\overline{F\left(X_i^m \hat{\beta}^f\right)} - \overline{F(X_i^f \hat{\beta}^f)}\right]$; Unexpl. = Unexplained or Coefficients effect, $\left[\overline{F\left(X_i^m \hat{\beta}^m\right)} - \overline{F\left(X_i^m \hat{\beta}^f\right)}\right]$

Source: Own construction using IPUMS-International.

non-subsistence sector than found with overall employment rates, because higher education, ceteris paribus, is strongly associated with higher employment rates in the former sector (but lower in the subsistence sector). That is, as the human capital of women improves over time, a higher proportion of them will be found working in the non-subsistence sector of the economy, even if total employment is expected to decline due to a shrinking subsistence sector. The lower schooling rates of women and, especially in the IOF, the different distribution by marital status and partners' employment have substantial negative contributions (adding more than 1% point altogether). This means that the gender gap would be even larger if women had the same schooling and single and divorced rates as men. An analysis with an enhanced set of characteristics using the 2007 census (Table 7) shows that a big part of the contribution of the lower human capital of women is associated with their lower proficiency in the Portuguese language. Its contribution is even larger than the contribution of attained education and literacy when

Table 8. Decomposition of the gender gap in total employment rates, alternative counterfactual (Explained and Unexplained terms)

	Census				**IOF**			
Differential	**1997**		**2007**		**2008/2009**		**2014/2015**	
	6.83* (0.10)**		**7.90*** (0.09)**		**0.21 (0.46)**		**2.56*** (0.28)**	
	Expl.	**Unexpl.**	**Expl.**	**Unexpl.**	**Expl.**	**Unexpl.**	**Expl.**	**Unexpl.**
All	−2.65***	9.49***	−4.26***	12.16***	−2.83***	3.04***	−3.02***	5.58***
	(0.08)	(0.11)	(0.07)	(0.10)	(0.43)	(0.52)	(0.24)	(0.31)
Geographic	−0.14***	2.34***	0.06***	0.25	0.17	1.14	−0.51***	−1.68**
	(0.02)	(0.36)	(0.01)	(0.26)	(0.16)	(0.75)	(0.09)	(0.57)
Education	1.03***	1.19***	0.53***	1.74***	−0.41	0.89	0.82*	1.94***
	(0.08)	(0.07)	(0.06)	(0.08)	(0.46)	(0.59)	(0.37)	(0.38)
Student	−1.99***	−0.13***	−2.20***	−1.00***	−1.11***	−0.38***	−1.18***	−0.10
	(0.03)	(0.02)	(0.03)	(0.03)	(0.20)	(0.10)	(0.13)	(0.06)
Age	−0.04***	−1.54***	−0.01	−2.50***	−0.26	−2.13***	−0.39***	−3.01***
	(0.01)	(0.15)	(0.01)	(0.12)	(0.13)	(0.63)	(0.09)	(0.44)
Disability	−0.11***	−0.01	−0.11***	−0.06***	−0.15	0.05	−0.23***	−0.02
	(0.01)	(0.01)	(0.01)	(0.01)	(0.08)	(0.04)	(0.05)	(0.02)
Household composition	−0.06***	3.14***	−0.07***	1.28***	−0.06	0.94	−0.32***	−0.30
	(0.01)	(0.26)	(0.01)	(0.22)	(0.06)	(1.00)	(0.05)	(0.80)
Marital status[+]	−1.35***	9.86***	−2.45***	10.17***	−1.02*	5.74***	−1.21***	8.30***
	(0.07)	(0.21)	(0.06)	(0.17)	(0.46)	(0.90)	(0.28)	(0.51)
Intercept		−5.36***		2.29***		−3.21		0.44
		(0.50)		(0.40)		(1.72)		(1.22)

Notes: Population aged 15 or older. Standard errors (Delta method) in parentheses below. [+]Marital status includes interaction with partner's employment. p-values: *<0.05; **<0.01; ***<0.001.

Counterfactual: Men's coefficients; women's characteristics. Expl. = explained or characteristics effect $\left[\overline{F\left(X_i^m \hat{\beta}^m\right)} - \overline{F(X_i^f \hat{\beta}^m)}\right]$; Unexpl. = Unexplained or Coefficients effect, $\left[\overline{F\left(X_i^f \hat{\beta}^m\right)} - \overline{F\left(X_i^f \hat{\beta}^f\right)}\right]$

Source: Own construction using IPUMS-International and IOF.

language is considered: 1.8 versus 1.6.[7] The same analysis shows that gender differences in the distribution of migration status, ethnicity or religion turned out not to be relevant for explaining the gender gap.

Therefore, a substantial portion of the gender gap in employment in the non-subsistence sector remains unexplained after equalizing the average characteristics of men and women, including their human capital. The detailed decomposition in Table 6 shows that there is a large positive coefficients effect associated with marital status and partner's employment, like in the case of total employment, explaining 7.8% points in 2007, 6.8 in 2014/2015. That is, the relatively lower conditional employment probabilities of married and single women, compared with men with similar civil status and other characteristics, is a crucial factor associated with lower female employment rates in both the subsistence and non-subsistence sectors. According to both data sources, this coefficients effect has increased over time. Whether the result of social norms, lack of support

[7] The same applies to the gap in total employment, although with negative contributions of education and language in this case.

Table 9. Decomposition of the gender gap in non-subsistence employment rates, alternative counterfactual (Explained and Unexplained terms)

Differential	Census		IOF					
	1997		2007		2008/2009		2014/2015	
	16.37* (0.07)**		**17.88*** (0.07)**		**13.78*** (0.50)**		**16.34*** (0.28)**	
	Expl.	**Unexpl.**	**Expl.**	**Unexpl.**	**Expl.**	**Unexpl.**	**Expl.**	**Unexpl.**
All	4.81***	11.56***	4.73***	13.16***	4.20***	9.57***	2.67***	13.66***
	(0.06)	(0.08)	(0.06)	(0.08)	(0.52)	(0.53)	(0.30)	(0.35)
Geographic	0.83***	1.76***	0.47***	0.56**	−0.34	1.24	−0.44*	−2.05***
	(0.04)	(0.19)	(0.03)	(0.20)	(0.25)	(0.90)	(0.20)	(0.60)
Education	5.50***	−0.14***	6.57***	−0.10	6.31***	−0.65	6.82***	−0.44
	(0.06)	(0.04)	(0.06)	(0.07)	(0.41)	(0.62)	(0.43)	(0.40)
Student	−1.65***	−0.07***	−2.12***	−0.59***	−1.27***	−0.49***	−1.54***	−0.37***
	(0.04)	(0.01)	(0.04)	(0.03)	(0.20)	(0.15)	(0.17)	(0.09)
Age	−0.03*	−1.76***	−0.05***	−3.26***	−0.15	−1.09	−0.37***	−4.92***
	(0.01)	(0.10)	(0.01)	(0.12)	(0.10)	(0.65)	(0.08)	(0.53)
Disability	−0.04***	−0.01	−0.06***	−0.01	−0.01	0.02	−0.08***	−0.04
	(0.00)	(0.01)	(0.00)	(0.01)	(0.04)	(0.09)	(0.03)	(0.03)
Household composition	0.02	0.93***	0.02	1.19***	−0.12*	0.96	−0.15***	−1.31
	(0.01)	(0.18)	(0.01)	(0.19)	(0.06)	(1.02)	(0.04)	(0.86)
Marital status+	0.18**	5.00***	−0.11	6.23***	−0.23	1.16	−1.57***	5.92***
	(0.07)	(0.14)	(0.07)	(0.17)	(0.43)	(0.95)	(0.43)	(0.70)
Intercept		5.86***		9.12***		8.43***		16.86***
		(0.32)		(0.35)		(1.93)		(1.35)

Notes: Population aged 15 or older. Standard errors (Delta method) in parentheses below. +Marital status includes interaction with partner's employment. p-values: *<0.05; **<0.01; ***<0.001.

Counterfactual: Men's coefficients; women's characteristics. Expl. = explained or characteristics effect $\left[\overline{F\left(X_i^m \hat{\beta}^m\right)} - \overline{F(X_i^f \hat{\beta}^m)}\right]$; Unexpl. = Unexplained or Coefficients effect, $\left[\overline{F\left(X_i^f \hat{\beta}^m\right)} - \overline{F\left(X_i^f \hat{\beta}^f\right)}\right]$

Source: Own construction using IPUMS-International and IOF.

to families with children, or gender discrimination, these distinct lower employment rates of women will tend to aggravate over time if not properly addressed.

Differences in conditional employment probabilities by age have negative contributions (census and IOF 2014/2015). This is the result of the fact that the relative employment rates of middle-aged and older women (compared with the youngest), ceteris paribus, are higher than among men of the same age. Something similar is found by location in 2014/2015, due to the higher employment rates of women in some northern provinces or in Maputo city (compared with Maputo province). The large positive value of the intercept in explaining the employment gap in the non-subsistence sector suggests that other unobserved factors might also be playing a significant role that is not identified here.[8]

[8] The intercept effect reflects the different conditional employment probabilities of men and women with the omitted categories (*i.e.* 25-34 years old, married without children, illiterate, with no education and not attending school, without any disability, living in rural Maputo province). Thus, it could also be reflecting unobserved factors that affect employment differently for men and women and are unrelated with observed worker characteristics, such as social norms, economic structure, discrimination, preferences, non-cognitive skills, etc.

Table 10. Decomposition of the gender gap in employment rates, 2007, alternative counterfactual (Explained and Unexplained terms)

	Total		**Non-subsistence**	
Differential	**7.90*** (0.09)**		**17.88*** (0.07)**	
	Expl.	**Unexpl.**	**Expl.**	**Unexpl.**
All	−4.37***	12.27***	5.07***	12.81***
	(0.07)	(0.10)	(0.07)	(0.08)
Geographic	0.05***	−0.03	0.35***	0.18
	(0.01)	(0.26)	(0.03)	(0.20)
Education	0.51***	1.05***	3.84***	0.27**
	(0.09)	(0.11)	(0.08)	(0.09)
Student	−2.17***	−0.98***	−1.95***	−0.55***
	(0.03)	(0.03)	(0.03)	(0.03)
Language	−0.07	1.01***	3.00***	−0.76***
	(0.08)	(0.10)	(0.07)	(0.09)
Age	−0.01	−2.35***	−0.04***	−3.38***
	(0.01)	(0.12)	(0.01)	(0.12)
Disability	−0.11***	−0.06***	−0.05***	−0.01
	(0.01)	(0.01)	(0.00)	(0.01)
Race	0.00**	0.02***	0.00	0.01***
	(0.00)	(0.00)	(0.00)	(0.00)
Religion	−0.07***	0.53***	0.00	0.42***
	(0.01)	(0.06)	(0.01)	(0.06)
Household composition	−0.07***	1.43***	0.01	1.34***
	(0.01)	(0.22)	(0.01)	(0.19)
Marital status[+]	−2.43***	10.19***	−0.21***	6.33***
	(0.06)	(0.17)	(0.06)	(0.17)
Immigration	0.00	0.49***	0.13***	0.15***
	(0.01)	(0.02)	(0.01)	(0.02)
Intercept		0.96*		8.80***
		(0.41)		(0.35)

Note: Population aged 15 or older. Standard errors (Delta method) in parentheses below. [+]Marital status includes interaction with partner's employment. p-values: *<0.05; **<0.01; ***<0.001.

Counterfactual: Men's coefficients; women's characteristics. Expl. = explained or characteristics effect $\left[\overline{F\left(X_i^m \hat{\beta}^m\right)} - \overline{F(X_i^f \hat{\beta}^m)}\right]$; Unexpl. = Unexplained or Coefficients effect, $\left[\overline{F\left(X_i^f \hat{\beta}^m\right)} - \overline{F\left(X_i^f \hat{\beta}^f\right)}\right]$

Source: Own construction using IPUMS-International.

The use of an alternative counterfactual in which men are given female average characteristics or, equivalently, women are given male conditional employment probabilities (Tables 8 and 9) produces qualitatively comparable results. The main difference is that the human capital explained effects tend to be larger when they are evaluated using male conditional employment probabilities. That is, given that employment rates of educated men are higher, the impact of equalizing the attained education and literacy rates of men and women would also be higher if women had male conditional employment probabilities. Education would then explain nearly 7% points of the employment gap in the non-subsistence sector in the last IOF and census (with again a large contribution of speaking Portuguese when this information is used in Table 10). The contribution of education when it comes to the gap in total employment is also higher, with a negative sign, again, in this case. With both types of employments, the corresponding aggregate characteristics effects are larger in absolute terms with this counterfactual.

6. CONCLUDING REMARKS

In this paper, we have investigated the trend in gender inequality in employment in Mozambique. We have shown that, in line with the conventional wisdom in development economics, men are taking more advantage than women during the expansion of the non-subsistence sector in recent years, thus aggravating the gender gap in employment in Mozambique, especially in terms of quality. Using a counterfactual analysis and a Blinder-Oaxaca-type decomposition, we have also investigated to what extent this gender gap can be explained by differences in characteristics or by differences in conditional employment probabilities.

Our findings show that a substantial part of the gender gap in non-subsistence employment can be explained by gender inequality in human capital, with men outperforming women in attained education, literacy, and Portuguese language proficiency. We have also identified a large differential in conditional employment probabilities of married men and women, along with other possible effects not explained by differences in endowments.

The conventional wisdom predicts that, in later stages of development, women would outperform men in education, fertility rates would drop, and white-collar jobs, more common among women, would be more abundant. However, this is a lengthy process and the economic context and initial conditions matter, as has also been pointed out by the related literature. The economic growth in still very poor sub-Saharan countries, a resource-rich region with very weak industrialization and lack of infrastructure, differs from the paths followed by others in their development process (see Arndt *et al.*, 2016). Furthermore, the region is characterized by large inequalities among individuals as well as among population groups and geographical areas, and a weak and urban-biased welfare state (Odusola *et al.*, 2017). Even in the most developed economies, women tend to lag behind men in the quantity and quality of jobs.

The OECD has recently included increasing women's participation in economic life among those crucial policy packages that are both growth-friendly and that reduce inequality (OECD, 2015). There is plenty of room to enhance women's access to better jobs by improving their education and facilitating the employment of married women, towards a more inclusive growth path in line with the sustainable development goals. In this line, the World Bank (World Bank, 2012) has pointed out that policy may promote the economic opportunities of women in different areas, such as: (i) formal institutions (*e.g.* correcting discriminatory laws and regulation, and gender bias in service delivery), (ii) informal institutions that alleviate the constraints on women's time (*e.g.* increasing access to child care and parental leave, infrastructure investments, easing women's access to technology and transport), and (iii) the working of markets (*i.e.* with active labour market policies addressing information problems, especially with skills training and wage subsidies, and affirmative action programs that improve the entry of women into wage employment and their advancement on the job once they are employed).

The focus on the gender gap in the emerging non-subsistence sector of the Mozambican economy does not mean that policies should not be also concerned with jobs in the farm sector. However, in that case gender equality is more about raising the productivity of female-headed households or the involvement of women in paid activities than about closing the employment gap, the focus of this study, given that women are strongly over-represented.

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